

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Atty. Dkt.: A8173

Paige L. HIGBY, et al.

Continuation of

Appln. No.: 08/472,189

Confirmation No. Unknown

Group Art Unit: Unknown

Filed: August 31, 2001

Examiner: Unknown

For: GLASS COMPOSITIONS

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to examination, please amend the above-identified application as follows:

**IN THE SPECIFICATION:**

**Page 1, first paragraph:**

This application is a continuation of Application No. 08/472,189 (Confirmation No. Unknown), filed June 7, 1995, which is a continuation of Application No. 08/285,652, filed August 3, 1994, which is a continuation-in-part of United States application No. 08/190,883, filed February 3, 1994, the disclosures of which are all incorporated herein by reference.

**IN THE CLAIMS:**

**Claims 2-12 are canceled.**

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**Claims 13-47 are added as new claims.**

13. A neutral gray colored glass composition having a base glass portion comprising:

SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.30 to 0.70 percent by weight
FeO	up to 0.16 percent by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM

wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.

14. The composition as in claim 13 wherein the direct solar heat transmission is at least 12 percentage points below the visible light transmission.

15. The composition as in claim 14 wherein the Fe<sub>2</sub>O<sub>3</sub> concentration is from 0.45 to 0.65 weight percent, the FeO concentration is from 0.08 to 0.16 weight percent, the Co<sub>3</sub>O<sub>4</sub> concentration is from 8 to 20 PPM and the Se concentration is from 1 to 5 PPM

16. The composition of claim 13 wherein the color of the glass is characterized by

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a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3%.

17. The composition as in claim 13 further including additional ultraviolet absorbing material.

18. The composition as in claim 17 wherein said ultraviolet absorbing material is titanium dioxide present in an amount up to 1.5 wt. % of the glass composition.

19. The composition as in claim 18 wherein said TiO<sub>2</sub> present is in an amount from 0.33 to 1.0 wt. %.

20. A glass sheet made from the composition as recited in claim 13.

21. The glass sheet as in claim 20 wherein the sheet has a thickness between 1.7 to 5 mm.

22. The glass sheet as in claim 20 wherein the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3%.

23. A neutral gray colored glass composition having a base glass portion comprising:

SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

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Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.30 to 0.70 percent by weight
FeO	up to 0.16 by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM
NiO	up to 50 PPM

wherein the color of the glass is characterized by a dominant wavelength in the range of less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.

24. The composition as in claim 23 wherein the direct solar heat transmission is at least 12 percentage points below the visible light transmission.

25. The composition as in claim 23 wherein the Fe<sub>2</sub>O<sub>3</sub> concentration is from 0.45 to 0.65 weight percent, the FeO concentration is from 0.08 to 0.16 weight percent, the Co<sub>3</sub>O<sub>4</sub> concentration is from 22 to 27 PPM, and the Se concentration is from 1 to 5 PPM.

26. The composition of claim 24 wherein the color of the glass is characterized by A dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3%.

27. The composition as in claim 23 further including additional ultraviolet absorbing material.

28. The composition as in claim 27 wherein said ultraviolet absorbing material is titanium dioxide present in an amount up to 1.5 wt. % of the glass composition.

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29. The composition as in claim 28 wherein said TiO<sub>2</sub> is present in an amount from 0.33 to 1.0 wt. %.

30. A glass sheet made from the composition as recited in claim 23.

31. The glass sheet as in claim 30 wherein the sheet has a thickness between 1.7 to 5 mm.

32. The glass sheet as in claim 30 wherein the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3%.

33. A neutral gray colored glass composition having a base glass portion comprising:

SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.45 to 0.70 percent by weight
FeO	up to 0.16 percent by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM

wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than about 8 percent, a visible light transmission of greater than 70 percent, and a direct solar heat transmission at least 12 percentage points below the visible light transmission at a thickness of 4 millimeters.

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34. The composition of claim 33 wherein the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3% at a thickness of 4 millimeters.

35. The composition as in claim 33 further including additional ultraviolet absorbing material.

36. A glass sheet made from the composition as recited in claim 33.

37. A neutral gray colored glass composition having a base glass portion comprising:

SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.45 to 0.70 percent by weight
FeO	up to 0.16 percent by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM

wherein the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than 6 percent and a visible light transmission of greater than 70 percent at a thickness of 4 millimeters.

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38. The composition as in claim 37 wherein the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3 percent at a thickness of 4 millimeters.

39. A neutral gray colored glass composition having a base glass portion comprising:

SiO <sub>2</sub>	65 to 80 percent by weight
Na <sub>2</sub> O	10 to 20 percent by weight
CaO	5 to 15 percent by weight
MgO	0 to 10 percent by weight
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight
K <sub>2</sub> O	0 to 5 percent by weight

and a colorant portion consisting essentially of:

Fe <sub>2</sub> O <sub>3</sub> (total iron)	greater than 0.45 up to 0.65 percent by weight
FeO	up to 0.16 percent by weight
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM
Se	0.5 to 10 PPM
NiO	up to 50 PPM

wherein the glass has a visible light transmission luminous transmittance of greater than 70 percent at a thickness of 4.0 millimeters.

40. The composition as in claim 39 wherein the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 6 percent at a thickness of 4.0 millimeters.

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41. The composition of claim 39 wherein the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3% at a thickness of 4.0 millimeters.

42. The composition as in claim 39 wherein the  $\text{Fe}_2\text{O}_3$  concentration is from 0.51 to 0.61 weight percent.

43. The composition as in claim 39 wherein the direct solar heat transmission is at least 12 percentage points below the visible light transmission.

44. The composition as in claim 39 further including additional ultraviolet absorbing material.

45. A glass sheet made from the composition as recited in claim 33.

46. The composition as in claim 39 wherein the  $\text{Fe}_2\text{O}_3$  concentration is from 0.51 to 0.61 weight percent, the  $\text{FeO}$  concentration is up to 0.14 weight percent, the  $\text{Co}_3\text{O}_4$  concentration is from 5 to 24 PPM, the Se concentration is from 1 to 9 PPM and the  $\text{NiO}$  concentration is 15 to 31 PPM and further wherein said composition has a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.

47. The composition as in claim 33 wherein the  $\text{Fe}_2\text{O}_3$  concentration is from 0.51 to 0.61 weight percent, the  $\text{FeO}$  concentration is up to 0.14 weight percent, the  $\text{Co}_3\text{O}_4$  concentration is from 5 to 24 PPM and the Se concentration is from 1 to 9 PPM.

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**REMARKS**

After entry of the present Preliminary Amendment, Claims 1 and 13-47 are pending in the present application. Claim 1 has been maintained in the application in order to avoid the possibility of the application having no claims pending at one point in time. The Examiner is authorized to cancel Claim 1. Alternatively, Applicants will file a supplemental preliminary amendment to cancel Claim 1.

Claims 13-47 have been added. These claims have been copied or substantially copied from U.S. Patent No. 6,114,264, a copy of which is being submitted concurrently herewith in an Information Disclosure Statement. (A further Information Disclosure Statement will be filed to make of record all the prior art cited in the parent and grandparent applications.)

Applicants have copied or substantially copied Claims 1-35 of the '264 Patent to preserve their rights under 35 U.S.C. § 135 to provoke an interference. Applicants may submit Rule 607 and 608 papers, as appropriate.

Applicant identifies in Table I below exemplary support in the present application for new Claims 13-47.

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TABLE I

New Claims 13-47	Exemplary Support in the Instant Application
<p>13. A neutral gray colored glass composition having a base glass portion comprising:</p> <p>SiO<sub>2</sub> 65 to 80 percent by weight Na<sub>2</sub>O 10 to 20 percent by weight CaO 5 to 15 percent by weight MgO 0 to 10 percent by weight Al<sub>2</sub>O<sub>3</sub> 0 to 5 percent by weight K<sub>2</sub>O 0 to 5 percent by weight</p> <p>and a colorant portion consisting essentially of:</p> <p>Fe<sub>2</sub>O<sub>3</sub> (total iron) 0.30 to 0.70 percent by weight FeO up to 0.16 percent by weight Co<sub>3</sub>O<sub>4</sub> 3 to 25 PPM Se 0.5 to 10 PPM</p>	<p>“there is provided an IR and UV absorbing soda lime silica glass of a neutral tint” (4: 2-3); “base glass” (6:28)</p> <p>SiO<sub>2</sub> 65 to 80 % Na<sub>2</sub>O 10 to 20 CaO 5 to 15 MgO 0 to 10 Al<sub>2</sub>O<sub>3</sub> 0 to 5 K<sub>2</sub>O 0 to 5</p> <p>(6:14-24)</p> <p>“the coloring constituents of the present invention: (6; 26-27)</p> <p>“total iron content expressed as Fe<sub>2</sub>O<sub>3</sub> ... of from 0.3 to 0.7% by weight” (4:13-14); 0.16 wt. % FeO (Example 9; “from about 3 to 25 ppm of Co<sub>3</sub>O<sub>4</sub>” (4:16); “0.5 to 10 parts by million (ppm) of Se (4:15-16)</p>
<p>wherein</p> <p>the color of the glass is characterized by a dominant wavelength less than 560 nanometers,</p> <p>a color purity of no higher than 6 percent and</p> <p>a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.</p>	<p>“a dominant wavelength less than 560 nm” (4:7-8)</p> <p>“a color purity not greater than 6” (4:8-9)</p> <p>“in a 4 mm thickness, a visible light transmission of at least 70%” (4:4-5)</p>
<p>14. The composition as in claim 13 wherein</p> <p>the direct solar heat transmission is at least 12 percentage points below the visible light</p>	<p>“a direct solar heat transmission at least 12 percentage points below the visible light</p>

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transmission.	transmission (4:5-7)
<p>15. The composition as in claim 14 wherein</p> <p>the Fe<sub>2</sub>O<sub>3</sub> concentration is from 0.45 to 0.65 weight percent,</p> <p>the FeO concentration is from 0.08 to 0.16 weight percent,</p> <p>the Co<sub>3</sub>O<sub>4</sub> concentration is from 8 to 20 PPM and</p> <p>the Se concentration is from 1 to 5 PPM.</p>	<p>“preferred compositions include ... 0.45 to 0.65% total iron (as Fe<sub>2</sub>O<sub>3</sub>)” (9:8-10)</p> <p>Examples 4 and 9 (<i>see, Table I</i>)</p> <p>“8 to 20 ppm Co<sub>3</sub>O<sub>4</sub>” (9:11)</p> <p>“1 to 5 ppm Se” (9:11)</p>
<p>16. The composition of claim 13 wherein</p> <p>the color of the glass is characterized by</p> <p>a dominant wavelength in the range of 494 to 560 nanometers and</p> <p>a color purity of no higher than 3%.</p>	<p>Examples 9 and 10 (<i>see, Table I</i>)</p> <p>“color purity ... most preferably no more than 3” (4:9-10)</p>
<p>17. The composition as in claim 13 further including</p> <p>additional ultraviolet absorbing material.</p>	<p>“TiO<sub>2</sub> may be added to the glass” (4:20)</p>
<p>18. The composition as in claim 17 wherein</p> <p>said ultraviolet absorbing material is titanium dioxide</p> <p>present in an amount up to 1.5 wt. % of the glass composition.</p>	<p>“TiO<sub>2</sub> may be added to the glass ...</p> <p>[in the range of] 0 to 1.5 weight percent TiO<sub>2</sub>” (4:20-21)</p>
<p>19. The composition as in claim 18 wherein</p> <p>said TiO<sub>2</sub> is present in an amount from 0.33 to 1.0 wt. %.</p>	<p>Examples 2 and 10 (Table I)</p>

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20. A glass sheet made from the composition as recited in claim 13.	“glass sheets” (7:12)																																		
21. The glass sheet as in claim 20 wherein the sheet has a thickness between 1.7 to 5 mm.	“glass sheets” (7:12) “the glass sheets for windshield use are of a thickness in the range of from about 1.7 mm to about 2.5 mm, while those tempered and used as sidelights or back lights are in the range of about 3 mm to about 5 mm thick” (7:16-20)																																		
22. The glass sheet as in claim 20 wherein the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and a color purity of no higher than 3%.	Examples 9 and 10 ( <i>see, Table I</i> ) “color purity ... most preferably no more than 3” (4:9-10)																																		
23. A neutral gray colored glass composition having a base glass portion comprising:  <table><tr><td>SiO<sub>2</sub></td><td>65 to 80 percent by weight</td></tr><tr><td>Na<sub>2</sub>O</td><td>10 to 20 percent by weight</td></tr><tr><td>CaO</td><td>5 to 15 percent by weight</td></tr><tr><td>MgO</td><td>0 to 10 percent by weight</td></tr><tr><td>Al<sub>2</sub>O<sub>3</sub></td><td>0 to 5 percent by weight</td></tr><tr><td>K<sub>2</sub>O</td><td>0 to 5 percent by weight</td></tr></table> and a colorant portion consisting essentially of:  <table><tr><td>Fe<sub>2</sub>O<sub>3</sub> (total iron)</td><td>0.30 to 0.70 percent by weight</td></tr><tr><td>FeO</td><td>up to 0.16] by weight</td></tr><tr><td>Co<sub>3</sub>O<sub>4</sub></td><td>3 to 25 PPM</td></tr><tr><td>Se</td><td>0.5 to 10 PPM</td></tr><tr><td>NiO</td><td>up to 50 PPM</td></tr></table>	SiO <sub>2</sub>	65 to 80 percent by weight	Na <sub>2</sub> O	10 to 20 percent by weight	CaO	5 to 15 percent by weight	MgO	0 to 10 percent by weight	Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight	K <sub>2</sub> O	0 to 5 percent by weight	Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.30 to 0.70 percent by weight	FeO	up to 0.16] by weight	Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM	Se	0.5 to 10 PPM	NiO	up to 50 PPM	“neutral tint” (4:2-3); “base glass” (6:28)  <table><tr><td>SiO<sub>2</sub></td><td>65 to 80 %</td></tr><tr><td>Na<sub>2</sub>O</td><td>10 to 20</td></tr><tr><td>CaO</td><td>5 to 15</td></tr><tr><td>MgO</td><td>0 to 10</td></tr><tr><td>Al<sub>2</sub>O<sub>3</sub></td><td>0 to 5</td></tr><tr><td>K<sub>2</sub>O</td><td>0 to 5</td></tr></table> (6:14-24) “coloring constituents” (6:26-27)  “total iron content expressed as Fe <sub>2</sub> O <sub>3</sub> ... of from 0.3 to 0.7% by weight” (4:13-14); 0.16 wt. % FeO (Example 9; “from about 3 to 25 ppm of Co <sub>3</sub> O <sub>4</sub> ” (4:16); “0.5 to 10 parts by	SiO <sub>2</sub>	65 to 80 %	Na <sub>2</sub> O	10 to 20	CaO	5 to 15	MgO	0 to 10	Al <sub>2</sub> O <sub>3</sub>	0 to 5	K <sub>2</sub> O	0 to 5
SiO <sub>2</sub>	65 to 80 percent by weight																																		
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wherein  the color of the glass is characterized by  a dominant wavelength in the range of less than 560 nanometers,  a color purity of no higher than 6 percent and  a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.	million (ppm) of Se (4:15-16); "0 to 50 ppm NiO" (4:20)  "a dominant wavelength less than 560 nm" (4:7-8)  "a color purity not greater than 6" (4:8-9)  "in a 4 mm thickness, a visible light transmission of at least 70%" (4:4-5)
24. The composition as in claim 23 wherein  the direct solar heat transmission is at least 12 percentage points below the visible light transmission.	"a direct solar heat transmission at least 12 percentage points below the visible light transmission (4:5-7)
25. The composition as in claim 23 wherein  the Fe <sub>2</sub> O <sub>3</sub> concentration is from 0.45 to 0.65 weight percent,  the FeO concentration is from 0.08 to 0.16 weight percent,  the Co <sub>3</sub> O <sub>4</sub> concentration is from 22 to 27 PPM, and  the Se concentration is from 1 to 5 PPM.	"preferred compositions include ... 0.45 to 0.65% total iron (as Fe <sub>2</sub> O <sub>3</sub> )" (9:8-10)  Examples 4 and 9 ( <i>see, Table I</i> )  "8 to 20 ppm Co <sub>3</sub> O <sub>4</sub> " (9:11)  "1 to 5 ppm Se" (9:11)
26. The composition of claim 24 wherein  the color of the glass is characterized by  a dominant wavelength in the range of 494 to 560 nanometers and	Examples 9 and 10 ( <i>see, Table I</i> )

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a color purity of no higher than 3%.	“color purity ... most preferably no more than 3” (4:9-10)
27. The composition as in claim 23 further including  additional ultraviolet absorbing material.	“TiO <sub>2</sub> may be added to the glass” (4:20)
28. The composition as in claim 27 wherein  said ultraviolet absorbing material is titanium dioxide  present in an amount up to 1.5 wt. % of the glass composition.	“TiO <sub>2</sub> may be added to the glass ... [in the range of] 0 to 1.5 weight percent TiO <sub>2</sub> ” (4:20-21)
29. The composition as in claim 28 wherein  said TiO <sub>2</sub> is present in an amount from 0.33 to 1.0 wt. %.	Examples 2 and 10 (Table I)
30. A glass sheet made from the composition as recited in claim 23.	“glass sheets” (7:12)
31. The glass sheet as in claim 30 wherein  the sheet has a thickness between 1.7 to 5 mm.	“glass sheets” (7:12)  “the glass sheets for windshield use are of a thickness in the range of from about 1.7 mm to about 2.5 mm, while those tempered and sued as sidelights or backlights are in the range of about 3 mm to about 5 mm thick” (7:16-20).
32. The glass sheet as in claim 30 wherein  the color of the glass is characterized by a dominant wavelength in the range of 494 to 560 nanometers and  a color purity of no higher than 3%.	Examples 9 and 10 ( <i>see</i> , Table I)  “color purity ... most preferably no more than 3: (4:9-10)
33. A neutral gray colored glass composition having a base glass portion comprising:	“there is provided an IR and UV absorbing soda lime silica glass of a neutral tint” (4:2-3); “base glass” (6:28)

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<p><chem>SiO2</chem> 65 to 80 percent by weight <chem>Na2O</chem> 10 to 20 percent by weight <chem>CaO</chem> 5 to 15 percent by weight <chem>MgO</chem> 0 to 10 percent by weight <chem>Al2O3</chem> 0 to 5 percent by weight <chem>K2O</chem> 0 to 5 percent by weight</p>	<p><chem>SiO2</chem> 65 to 80 % <chem>Na2O</chem> 10 to 20 <chem>CaO</chem> 5 to 15 <chem>MgO</chem> 0 to 10 <chem>Al2O3</chem> 0 to 5 <chem>K2O</chem> 0 to 5</p>
<p>and a colorant portion consisting essentially of:</p>	<p>(6:14-24)</p>
<p><chem>Fe2O3</chem> (total iron) 0.45 to 0.7-0 percent by Weight <chem>FeO</chem> up to 0.16 percent by weight <chem>Co3O4</chem> 3 to 25 PPM <chem>Se</chem> 0.5 to 10 PPM</p>	<p>“coloring constituents” (6:26-27) “total iron content expressed as <chem>Fe2O3</chem>, ... of from 0.3 to 0.7 % by weight” (4:13-14); “preferred compositions include ... 0.45 to 0.65 % total iron (as <chem>Fe2O3</chem>)” (9:8-10); 0.16 wt % <chem>FeO</chem> (Example 9); “from about 3 to 25 ppm of <chem>Co3O4</chem>” (4:16); “0.5 to 10 parts by million (ppm) of <chem>Se</chem>” (4:15-16)</p>
<p>wherein</p> <p>the color of the glass is characterized by a dominant wavelength less than 560 nanometers, a color purity of no higher than about 8 percent, a visible light transmission of greater than 70 percent, and a direct solar heat transmission at least 12 percentage points below the visible light transmission at a thickness of 4 millimeters.</p>	<p>“a dominant wavelength less than 560 nm” (4:7-8) “a color purity not greater than 6” (4:8-9) “in a 4 mm thickness, a visible light transmission of at least 70%” (4:4-5) “a direct solar heat transmission at least 12 percentage points below the visible light transmission (4:5-7)</p>
<p>34. The composition of claim 33 wherein the color of the glass is characterized by dominant wavelengths in the range of 494 to 56 nanometers and</p>	<p>Examples 9 and 10 (see, Table I)</p>

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a color purity of no higher than 3% at a thickness of 4 millimeters.	"color purity ... most preferably no more than 3" (4:9-10)												
35. The composition as in claim 33 further including  additional ultraviolet absorbing material.	"TiO <sub>2</sub> may be added to the glass" (4:20)												
36. A glass sheet made from the composition as recited in claim 33.	"glass sheets" (7:12)												
37. A neutral gray colored glass composition having a base glass portion comprising:  <table><tr><td>SiO<sub>2</sub></td><td>65 to 80 percent by weight</td></tr><tr><td>Na<sub>2</sub>O</td><td>10 to 20 percent by weight</td></tr><tr><td>CaO</td><td>5 to 15 percent by weight</td></tr><tr><td>MgO</td><td>0 to 10 percent by weight</td></tr><tr><td>Al<sub>2</sub>O<sub>3</sub></td><td>0 to 5 percent by weight</td></tr><tr><td>K<sub>2</sub>O</td><td>0 to 5 percent by weight</td></tr></table>	SiO <sub>2</sub>	65 to 80 percent by weight	Na <sub>2</sub> O	10 to 20 percent by weight	CaO	5 to 15 percent by weight	MgO	0 to 10 percent by weight	Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight	K <sub>2</sub> O	0 to 5 percent by weight	"neutral tint" (4:2-3); "base glass" (6:28)
SiO <sub>2</sub>	65 to 80 percent by weight												
Na <sub>2</sub> O	10 to 20 percent by weight												
CaO	5 to 15 percent by weight												
MgO	0 to 10 percent by weight												
Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight												
K <sub>2</sub> O	0 to 5 percent by weight												
and a colorant portion consisting essentially of:  <table><tr><td>Fe<sub>2</sub>O<sub>3</sub> (total iron)</td><td>0.45 to 0.70 percent by weight</td></tr><tr><td>FeO</td><td>up to 0.16 percent by weight</td></tr><tr><td>Co<sub>3</sub>O<sub>4</sub></td><td>3 to 25 PPM</td></tr><tr><td>Se</td><td>0.5 to 10 PPM</td></tr></table>	Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.45 to 0.70 percent by weight	FeO	up to 0.16 percent by weight	Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM	Se	0.5 to 10 PPM	SiO <sub>2</sub> 65 to 80 % Na <sub>2</sub> O 10 to 20 CaO 5 to 15 MgO 0 to 10 Al <sub>2</sub> O <sub>3</sub> 0 to 5 K <sub>2</sub> O 0 to 5  (6:14-24)  "coloring constituents" (6:26-27)  "total iron content expressed as Fe <sub>2</sub> O <sub>3</sub> , ... of from 0.3 to 0.7 % by weight" (4:13-14); "preferred compositions include ... 0.45 to 0.65 % total iron (as Fe <sub>2</sub> O <sub>3</sub> )" (9:8-10); 0.16 wt % FeO (Example 9); "from about 3 to 25 ppm of Co <sub>3</sub> O <sub>4</sub> " (4:16); "0.5 to 10 parts by million (ppm) of Se" (4:15-16)				
Fe <sub>2</sub> O <sub>3</sub> (total iron)	0.45 to 0.70 percent by weight												
FeO	up to 0.16 percent by weight												
Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM												
Se	0.5 to 10 PPM												
wherein  the color of the glass is characterized by a dominant wavelength less than 560 nanometers,  a color purity of no higher than 6 percent and  a visible light transmission of greater than	"a dominant wavelength less than 560 nm" (4:7-8)  "a color purity not greater than 6" (4:8-9)  "in a 4 mm thickness, a visible light												

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70 percent at a thickness of 4 millimeters.  38. The composition as in claim 37 wherein  the color of the glass is characterized by  a dominant wavelength in the range of 494 to 560 nanometers and  a color purity of no higher than 3 percent at a thickness of 4 millimeters.	transmission of at least 70%" (4:4-5)  Examples 9 and 10 ( <i>see, Table I</i> )  "color purity ... most preferably no more than 3 (4:9-10)																																		
39. A neutral gray colored glass composition having a base glass portion comprising:  <table><tr><td>SiO<sub>2</sub></td><td>65 to 80 percent by weight</td></tr><tr><td>Na<sub>2</sub>O</td><td>10 to 20 percent by weight</td></tr><tr><td>CaO</td><td>5 to 15 percent by weight</td></tr><tr><td>MgO</td><td>0 to 10 percent by weight</td></tr><tr><td>Al<sub>2</sub>O<sub>3</sub></td><td>0 to 5 percent by weight</td></tr><tr><td>K<sub>2</sub>O</td><td>0 to 5 percent by weight</td></tr></table>  and a colorant portion consisting essentially of:  <table><tr><td>Fe<sub>2</sub>O<sub>3</sub> (total iron)</td><td>greater than 0.45 up to 0.65 percent by weight</td></tr><tr><td>FeO</td><td>up to 0.16 percent by weight</td></tr><tr><td>Co<sub>3</sub>O<sub>4</sub></td><td>3 to 25 PPM</td></tr><tr><td>Se</td><td>0.5 to 10 PPM</td></tr><tr><td>NiO</td><td>up to 50 PPM</td></tr></table>  wherein the glass has a visible light transmission luminous transmittance of greater than 70 percent at a thickness of 4.0 millimeters.	SiO <sub>2</sub>	65 to 80 percent by weight	Na <sub>2</sub> O	10 to 20 percent by weight	CaO	5 to 15 percent by weight	MgO	0 to 10 percent by weight	Al <sub>2</sub> O <sub>3</sub>	0 to 5 percent by weight	K <sub>2</sub> O	0 to 5 percent by weight	Fe <sub>2</sub> O <sub>3</sub> (total iron)	greater than 0.45 up to 0.65 percent by weight	FeO	up to 0.16 percent by weight	Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM	Se	0.5 to 10 PPM	NiO	up to 50 PPM	"neutral tint" (4:2-3); "base glass" (6:28)  <table><tr><td>SiO<sub>2</sub></td><td>65 to 80 %</td></tr><tr><td>Na<sub>2</sub>O</td><td>10 to 20</td></tr><tr><td>CaO</td><td>5 to 15</td></tr><tr><td>MgO</td><td>0 to 10</td></tr><tr><td>Al<sub>2</sub>O<sub>3</sub></td><td>0 to 5</td></tr><tr><td>K<sub>2</sub>O</td><td>0 to 5</td></tr></table> (6:14-24)  "coloring constituents" (6:26-27)  "total iron content expressed as Fe <sub>2</sub> O <sub>3</sub> , ... of from 0.3 to 0.7 % by weight" (4:13-14); "preferred compositions include ... 0.45 to 0.65 % total iron (as Fe <sub>2</sub> O <sub>3</sub> )" (9:8-10); 0.16 wt % FeO (Example 9); "from about 3 to 25 ppm of Co <sub>3</sub> O <sub>4</sub> " (4:16); "0.5 to 10 parts by million (ppm) of Se" (4:15-16)  "in a 4 mm thickness, visible light transmission of at least 70%" (4:4-5)	SiO <sub>2</sub>	65 to 80 %	Na <sub>2</sub> O	10 to 20	CaO	5 to 15	MgO	0 to 10	Al <sub>2</sub> O <sub>3</sub>	0 to 5	K <sub>2</sub> O	0 to 5
SiO <sub>2</sub>	65 to 80 percent by weight																																		
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Co <sub>3</sub> O <sub>4</sub>	3 to 25 PPM																																		
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K <sub>2</sub> O	0 to 5																																		
40. The composition as in claim 39 wherein  the color of the glass is characterized by a	Examples 9 and 10 ( <i>see, Table I</i> )																																		

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dominant wavelength in the range of 494 to 560 nanometers and  a color purity of no higher than 6 percent at a thickness of 4.0 millimeters.	“a color purity ... most preferably not greater than 6” (4:8-9); 4 mm thickness” (4:4)
41. The composition of claim 39 wherein  the color of the glass is characterized by  a dominant wavelength in the range of 494 to 560 nanometers and  a color purity of no higher than 3% at a thickness of 4.0 millimeters.	Examples 9 and 10 ( <i>see, Table I</i> )  “a color purity ... most preferably no greater than 3” (4:9-10)
42. The composition as in claim 39 wherein  the Fe <sub>2</sub> O <sub>3</sub> concentration is from 0.51 to 0.61 weight percent.	Examples 8 and 5 ( <i>see, Table I</i> )
43. The composition as in claim 39 wherein  the direct solar heat transmission is at least 12 percentage points below the visible light transmission.	“a direct solar heat transmission at least 12 percentage points below the visible light transmission (4:5-7)
44. The composition as in claim 39 further including  additional ultraviolet absorbing material.	“TiO <sub>2</sub> may be added to the glass” (4:20)
45. A glass sheet made from the composition as recited in claim 33.	“glass sheets” (7:12)
46. The composition as in claim 39 wherein  the Fe <sub>2</sub> O <sub>3</sub> concentration is from 0.51 to 0.61 weight percent,  the FeO concentration is up to 0.14 weight percent,	Examples 8 and 5 ( <i>see, Table I</i> )  Examples 2, 5 and 7 ( <i>see, Table I</i> )

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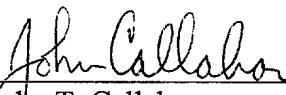
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<p>the <math>\text{Co}_3\text{O}_4</math> concentration is from 5 to 24 PPM, and the <math>\text{NiO}</math> concentration is 15 to 31 PPM and further wherein said composition has a visible light transmission of 70 percent or greater at a thickness of 4 millimeters.</p>	<p>Examples 6 and 8 (<i>see, Table I</i>) Examples 8 and 3 (<i>see, Table I</i>) Examples 3 and 8 (<i>see, Table I</i>) “in a 4 mm thickness, a visible light transmission of at least 70%” (4:4-5)</p>
<p>47. The composition as in claim 33 wherein the <math>\text{Fe}_2\text{O}_3</math> concentration is from 0.51 to 0.61 weight percent, the <math>\text{FeO}</math> concentration is up to 0.14 weight percent, the <math>\text{Co}_3\text{O}_4</math> concentration is from 5 to 24 PPM and the Se concentration is from 1 to 9 PPM.</p>	<p>Examples 8 and 5 (<i>see, Table I</i>) Examples 2, 5 and 7 (<i>see, Table I</i>) Examples 6 and 8 (<i>see, Table I</i>) Examples 8 and 3 (<i>see, Table I</i>)</p>

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Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,

  
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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

The specification is changed as follows:

**Page 1, first paragraph:**

This application is a continuation of Application No. 08/472,189 (Confirmation No.  
Unknown), filed June 7, 1995, which is a continuation of Application No. 08/285,652, filed  
August 3, 1994, which is a continuation-in-part of United States application No. 08/190,883,  
filed February 3, 1994, the disclosures of which are all incorporated herein by reference.

IN THE CLAIMS:

**Claims 2-12 are canceled.**

**Claims 13-47 are added as new claims.**